Patent Claims:

1 – 14 (canceled)

15. (new) A detector, adapted to detect a crack in a metal component, comprising:

an electrical conductor having an electrical property and fixidly attached to the component and adapted to propagate the crack that initiates in the metal component through the metal component/conductor interface and into the conductor;

a capacitor electrically connected to the electric conductor; and

an electric circuit comprised of the component, the capacitor, and the electrical conductor wherein the cracks in the component produce a change in the electrical property of the electrical conductor so that a deviation in the electric circuit is produced.

16. (new) The detector as claimed in claim 15, wherein the electrical conductor functions as an emitter and as a receiver.

17. (new) The detector as claimed in claim 15, wherein the degradation of the component and the degradation of the electrical conductor is selected from the group consisting of: deformation, removal of material, crack formation, and crack propagation.

18. (new) The detector as claimed in claim 15, wherein the degradation of the component or the degradation of the electrical conductor is selected from the group consisting of: deformation, removal of material, crack formation, and crack propagation.

19. (new) The detector as claimed in claim 15, wherein the electrical conductor has a electrical resonant circuit.

20. (new) The detector as claimed in claim 15, wherein the electrical conductor includes an electrically conductive conductor material selected from the group consisting of: metallic conductors and ceramic conductors.

21. (new) The detector as claimed in claim 20, wherein a component material of the component and the conductor material of the electrical conductor have a mechanical property that is about the same.

22. (new) The detector as claimed in claim 21, wherein the mechanical property is selected from the group consisting of: thermal expansion behavior and fracture toughness.

23. (new) The detector as claimed in claim 15, wherein the electrical conductor is arranged at a surface portion of the component and in the volume of the component.

24. (new) The detector as claimed in claim 15, wherein the electrical conductor is arranged at a surface portion of the component or in the volume of the component.

25. (new) The detector as claimed in claim 15, wherein the component is a heat shield of a combustion chamber.

26. (new) The detector as claimed in claim 25, wherein the monitoring structure is arranged toward a surface portion of the heat shield.

27. (new) A process for producing a sensing arrangement, comprising:

arranging a component and a monitoring structure towards one another;

connecting the component and the monitoring structure; and

providing a monitoring device that is not permanently electrically connected to the monitoring device.

28. (new) The process as claimed in claim 27, wherein a ceramic is used as a component material of the component or as conductor material of the monitoring structure.

29. (new) The process as claimed in claim 28, wherein a joint sintering of the component and the monitoring structure is carried out to connect the component and the monitoring structure.

30. (new) The process as claimed in claim 27, wherein the ceramic is used as component material of the component and as conductor material of the monitoring structure.

31. (new) A method for monitoring a turbine component using a sensing arrangement, comprising:

determining an actual value of a defined electrical property of a monitoring structure by a monitoring device with an electrical or electromagnetic coupling being produced between the monitoring structure and the monitoring device; and

comparing the actual value of the electrical property with a desired value that represents the fitness of the component.

32. (new) The method as claimed in claim 31, wherein the defined electrical property of the monitoring structure is selected from the group consisting of: DC resistance, impedance, and a radio frequency resonance property.

33. (new) The method as claimed in claim 31,wherein the determination of the actual value of the defined electrical property is accomplished in an operating phase of the component and in a stationary phase of the component.

34. (new) The method as claimed in claim 31,wherein the determination of the actual value of the defined electrical property is accomplished in an operating phase of the component or in a stationary phase of the component.

35. (new) An assembly from a structural element, comprising:

a component for high-temperature applications;

a monitoring device to record a crack in the component; and

an electrically conductive monitoring structure operatively associated with the component having a defined electrical property and not permanently electrically connected to the monitoring device such that the electrically conductive monitoring structure and the monitoring device form an electrical resonant circuit, wherein

the cracks in the component cause cracks in the monitoring structure and produce a change in the defined electrical property of the monitoring structure so that it is possible to record a deviation in the property of the resonant circuit formed from monitoring structure and monitoring device as a result of the change.